

Clean Version of Claims

1. A method for removing contaminants from flat media carriers, comprising the steps of:

loading the carriers onto a rotor within a flat media carrier cleaning machine;

spinning the rotor;

spraying a water/surfactant mixture onto the carriers via an inlet line by the steps of:

injecting water into the inlet line,

measuring the flow of water entering the inlet line,

pumping surfactant from a storage vessel into the inlet line using a flow metering pump,

mixing the surfactant and water to obtain a surfactant/water mixture,

setting flow rate of the flow metering pump to achieve a desired concentration of surfactant for the surfactant/water mixture.

2. A method according to Claim 1 further comprising the steps of

discontinuing pumping surfactant;

rinsing the carriers by spraying the carriers only with water.

3. A method according to Claim 2 further comprising the steps of

discontinuing injecting of water into the inlet line;

drying the carriers by spraying the carriers with a dry gas.

4. A method according to Claim 4 wherein the dry gas is selected from the group consisting of: nitrogen and compressed air.

5. A method according to Claim 1 wherein the water comprises de-ionized water.

6. A method according to Claim 1 further comprising the step of spinning the rotor at from 1-50 rpm while spraying the mixture toward the carriers.

7. A method according to Claim 1 further comprising the step of adjusting flow rate of surfactant being pumped into the inlet line by adjusting operation of the metering pump.

8. A method according to Claim 1 wherein the surfactant and water are injected into the inlet line via and under the control of a mixing control valve.

9. (Amended) An apparatus for cleaning flat media carriers, comprising:

63 a rotor rotatably mounted within a chamber;

an array of nozzles arranged to spray fluid onto a media carrier on the rotor;

a control valve connected by a fluid line to one or more of the nozzles;

a water inlet line for providing water to the control valve;

a detergent source;

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a detergent injection line connecting the detergent source to the control valve; and

a metering pump in the detergent injection line for pumping detergent from the detergent source to the control valve at a controllable pumping rate.

10. An apparatus according to Claim 9 further comprising a housing around the chamber.

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11. (Amended) An apparatus according to Claim 9 further comprising a boost pump connected to the water source for providing a desired inlet water pressure to the water inlet line.

12. (Canceled)

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13. (Amended) An apparatus according to Claim 9 further comprising a detergent return line connected between the detergent injection line and the detergent source for providing a return path for detergent back to the detergent source.

14. (Amended) An apparatus according to Claim 9 further comprising a recirculation line connected between the water inlet line and a water source for providing a recirculation path for water back to the water source.

15. (Amended) An apparatus according to Claim 9 wherein the control valve comprises a mixing control valve for mixing the water and detergent.

16. (Amended) An apparatus for cleaning media carriers, comprising:

a rotor rotatably mounted within a chamber;

a spray manifold having nozzles disposed in the chamber and arranged to spray fluid towards the rotor;

a control valve connected by a fluid line to the spray manifold;

a water inlet line for providing water to the control valve;

a detergent source;

a detergent injection line connecting the detergent source to the control valve;

a metering pump associated with the detergent injection line; and

means for controlling pumping rate of the metering pump to produce a desired detergent concentration in the detergent/water mixture provided to the spray manifold.

17. (Amended) An apparatus according to Claim 16 further comprising a flow meter associated with the water inlet line for measuring a flow rate of water provided to the control valve.

18. (Amended) An apparatus according to Claim 16 wherein the control valve comprises a mixing control valve for mixing the detergent and the water.

19. (Amended) An apparatus according to Claim 16 further comprising a detergent return line connected between the detergent injection line proximate the control valve and the detergent source.

20. (Amended) An apparatus according to Claim 16 further comprising a recirculation line connected between the water inlet

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line proximate the control valve and a water source for providing a recirculation path for water back to the water source.

21. (Canceled)

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22. (Amended) An apparatus according to Claim 16 wherein the metering pump comprises a positive displacement diaphragm pump, and wherein said means for controlling a pumping rate of the metering pump comprises means for adjusting pumping speed.

23. (Amended) An apparatus according to Claim 22 wherein said means for controlling pumping rate of the metering pump further comprises means for adjusting pump stroke length.
